interface a signaling connection between the terminal's signaling unit and the central unit, using a protocol supported by the terminal.--

## REMARKS

A marked-up version of the claims is enclosed. The non-final Official Action dated November 20, 2002 has been received and its contents carefully studied. The pending claims are claims 1-11. The independent claims are claims 1, 6, 8, 9 and 10.

A corrected set of drawings is enclosed. The abstract is amended to eliminate the legal term "means." Claims 1 and 5 are also amended to overcome the objection related to the word "means." Claim 1 is further amended by including all the limitations of claim 2, and therefore claim 2 is cancelled. Also, claim 8 is amended to include a feature for receiving the indication discussed at claim 10, line 11. It is respectfully believed that no amendment of independent claims 6, 9, or 10 is necessary in order to overcome the present rejections.

Claims 1-6 and 8-11 are rejected as obvious under 35 U.S.C. § 103 in view of *Ohanian* (U.S. Patent No. 6,122,287) and *Kudo* (U.S. Patent No. 6,154,458). Claim 7 is indicated to be allowable if placed in independent form.

The Rejected Claims are not Obvious from the Cited References

The *Ohanian* reference admittedly discloses the general idea of sorting out a situation where two communicating devices must first agree upon a common data link layer protocol for communication, before meaningful communication may begin. However, the way in which this idea is implemented in practice in *Ohanian* is fundamentally different from the applicant's present invention.

*Ohanian* assumes that the remote device may be completely ignorant of the protocol choosing step, and just transmits using its own default protocol. It is then the responsibility of the local or responding device to find out which protocol the initiation message corresponds to. The responding device extracts what it believes to be the contents of one or more fields in the initiation message, and tries applying various known protocols to their interpretation. The first

protocol that proves to give meaningful results is chosen to be the responding device's educated guess about what protocol the remote device used in transmitting.

It is important to note that in the *Ohanian* arrangement, the remote device will not even become aware of there being a protocol-choosing step in the procedure of setting up a connection. On the other hand, in the claimed present invention, **both** devices take an active part in the protocol negotiation.

In the present invention, the central unit transmits a MAC Transmission Control message that includes a specific code value. The content of this code value represents the protocol facilities of the central unit. A remote unit that has received the code value can immediately (at its simplest with a single one-bit AND comparison) check whether the central unit supports a certain protocol.

The solution of the present invention does not allow the very free *ad hoc* matching of protocols allowed by *Ohanian*, because when the remote devices receive the MAC Transmission Control message they must, as an absolute minimum requirement, be able to locate the code value within it correctly; in other words the responding (remote) units must know the "protocol" that was used to compose the MAC Transmission Control message. However, if this minimum requirement is fulfilled, the present invention enables much simpler and much less processor-strained protocol recognition compared to the complicated field value matching principle of *Ohanian*.

We may imagine a situation where a number of mutually alternative protocols would be principally available. These protocols differ from each other in how optimal they are in downlink transmission and/or uplink transmission. Let us further assume that there are a protocol A and a protocol B, the optimality of which is exactly the same in the downlink direction. However, regarding uplink transmission from a certain type of local devices, protocol B is much better than protocol A. If the *Ohanian* solution is used, the remote device simply makes a unilateral decision, picks one of the protocols (say, protocol A) and starts transmitting. The local device recognizes that protocol A is in use, but can do nothing else than just adapt itself to the decision of the remote device and start using protocol A, even if protocol B had

suited the needs of the local device much better. If the present invention is in use, the remote device sends an indication that it supports protocols A and B, and gives the local device a possibility to choose from these. In such case, the local device will naturally grasp the opportunity and choose protocol B, because it knows that protocol B suits its needs better. From the viewpoint of the remote device, it is then just the same whether protocol A or protocol B was used, because of our assumption about their equality in downlink advantageousness.

If we go a little bit more into the device implementation features, the present claimed invention differs from *Ohanian* in that, according to the invention, the central unit is assumed to have signaling units separated from network interfaces, so that any pair where one has been picked from each group can basically be used for communication. Also, in the remote unit there is a separation between a network interface and a signaling unit. However, according to the ISDN architecture shown in figure 1 of *Ohanian*, there may be several parallel entities on higher protocol levels, all designed to use a single ISDN-type network interface that is adaptable for interworking with various different higher-level entities.

The independent claims of the present application expressly require that the network interfaces of the communicating devices are responsible for the signaling protocol sort-out, and the signaling units only come into play after the network interfaces have come to a conclusion about the protocol to be used. In this respect the Examiner cited the reference publication of *Kudoh* (US 6,154,458), which relates to the ATM world and admittedly discloses the fact that a communicating device (an ATM terminal in *Kudoh*) may comprise an "MIB editing unit" the task of which is to edit (create) messages that are to be transmitted to the ATM switch (column 7, lines 32-33). The message-creating entity is separate from the "protocol processing unit", which latter can be configured to operate according to the ATM Forum specifications or ITU specifications. The MIB editing unit exchanges protocol resolution messages with an ATM switch, and according to the results of such protocol resolution the protocol processing unit is reconfigured if necessary.

It should be noted, however, that *Kudoh* only discloses the use of a **single** protocol processing unit and not multiple protocol processing units that are selectable in parallel.

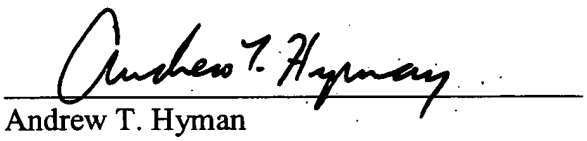
Additionally, *Kudoh's* configurable protocol processing unit is a feature of the terminal, whereas the present invention involves a terminal capable of having one fixed signaling unit and one network interface, while a central unit has a multitude of both types of devices.

## CONCLUSION

For these reasons, it is respectfully believed that the present claimed invention is very different from the cited references, and from any combination of those references that would be obvious to a person skilled in the art. Early passage of the pending claims to issue is earnestly solicited. Applicant would appreciate if the Examiner would please contact Applicant's attorney by telephone, if that might help to speedily dispose of any unresolved issues pertaining to the present application.

Respectfully submitted,

Dated: November 20, 2003



Andrew T. Hyman
Attorney for Applicant
Registration No. 45,858

WARE, FRESSOLA, VAN DER
SLUYS & ADOLPHSON LLP
Building Five, Bradford Green
755 Main Street, P.O. Box 224
Monroe, CT 06468
Telephone: (203) 261-1234
Facsimile: (203) 261-5676
USPTO Customer No. 004955

**Marked-Up Version of the Claims Showing Changes Made**

Please amend the application as follows.

IN THE CLAIMS:

1. (Twice Amended) A method for establishing a signaling connection with a terminal (102, 103, 104) in a central unit (101) of a communications system, said terminal and central unit comprising a network interface (107, 108, 109) and signaling unit (105, 106, 110), characterized in that it comprises steps in which

- by [means of] communication between the central unit's network interface (107, 108) and the terminal's network interface (109), information is created about the signaling protocol supported by the terminal, and
- signaling is started using a signaling unit (105, 106) in the central unit that supports the same signaling protocol as the terminal,

wherein:

- a message (201) is sent from the central unit's network interface (107) to the terminal, indicating the signaling protocols supported by the central unit,
- in response to an answer message (202) sent by the terminal indicating the terminal's selection for signaling protocol, a connection is established (203, 204) between the central unit's network interface (107) and the central unit's signaling unit (105) that supports the signaling protocol chosen by the terminal, and
- a point-to-point signaling connection (205) is established between the central unit and the terminal using the signaling protocol selected by the terminal.

2. CANCEL.

3. (Amended) The method of claim [2] 1, characterized in that said message (203) contains a code for signaling protocol support and an associated value which is a binary number and in which each bit represents a particular signaling protocol.

5. (Twice Amended) The method of claim 1, characterized in that therein

- by [means of] communication according to the MAC protocol layer between the central unit's network interface (107, 108) and the terminal's network interface (109), information is created about the signaling protocol supported by the terminal, and
- signaling is started using a signaling unit (105,106) in the central unit that supports the same CC protocol layer signaling protocol as the terminal.

8. (Amended) A central unit (101) in a communications system, comprising a signaling unit (105, 106) and a network interface (107, 108), characterized in that it is equipped so as to use in a signaling connection with a terminal of the communications system at least one signaling protocol, to which end it comprises means for indicating to the terminal the signaling protocols supported by the central unit, means for receiving from the terminal an indication about the capability of the terminal of supporting a particular one of the signaling protocols the central unit indicated to the terminal, and means for setting up a signaling connection via the central unit's network interface, using a selected signaling protocol between the central unit and the terminal.

IN THE ABSTRACT:

Please amend the abstract as follows:

-- A communications system comprises a central unit (101) and terminals (102, 103, 104). It is equipped so as to establish and maintain a signaling connection between the central unit and at least one terminal using one of at least two alternative signaling protocols. To that end it comprises in the central unit [means] a device for indicating to a terminal the signaling protocols supported by the central unit, and [means] a device for setting up via the central unit's network

interface a signaling connection between the central unit's signaling unit and the terminal, using a selected signaling protocol. Correspondingly, in the terminal the system comprises [means] a device for indicating to the central unit the signaling protocol supported by the terminal in response to a message sent by the central unit as well as [means] a device for setting up via the terminal's network interface a signaling connection between the terminal's signaling unit and the central unit, using a protocol supported by the terminal.--